

71677/74



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COMPLETE SPECIFICATION

(ORIGINAL)

FOR OFFICE USE

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Complete Specification for the invention entitled: Means for retaining wires in position on a panel.

The following statement is a full description of this invention, including the best method of performing it known to me:—

Note: The description is to be typed in double spacing, pica type face, in an area not exceeding 9 3/4" in depth and 6 1/2" in width, on tough white paper of good quality and it is to be inserted inside this form.

This invention relates to means for retaining one or more wires, cables, tubes or the like (hereinafter referred to as wires) in position relative to a panel and it refers particularly to retaining means which may be used for securing in position a range of sizes of wires or bunches of wires.

The invention has been devised particularly with the object of providing retaining means, for the purpose indicated, of relatively simple design which will be convenient to manufacture and capable of use to hold in position a substantial range of sizes of wires or bunches of wires.

Another object is to provide retaining means which will be easy to engage securely in a hole in a panel and which will then be convenient to use to secure in position a wire or bunch of wires.

A further object is to provide retaining means for the purpose indicated which may incorporate a standard flexible loop as the means for attaching the wire or bunch of wires.

With these and other objects in view, the present invention provides a retaining device comprising a resilient attachment member adapted to be engaged in a hole in a panel or other support and a loop member connected or connectible to the attachment member, the attachment member having means for retaining it in its position in the hole and means for holding part of the loop member when said loop member is wrapped around a wire or wires, and said loop member being

such that when one part of it is connected to the attachment member it may be wrapped about a wire or wires and an apposite part engaged with the loop-holding means of the attachment member so that the wire or wires will be fastened in position relative to the panel.

The loop member may be formed integrally with the attachment member or it may be a separate member attachable to the attachment member.

Preferably, the retaining means is moulded of a resilient material, or a synthetic rubber, or other resilient or flexible material.

In order that the invention may be clearly understood and readily put into practical effect there shall now be described with reference to the accompanying illustrative drawings preferred constructions of a retaining means made according to the invention. In the drawings:

Figure 1 is a rear perspective view of a retaining means;

Figure 2 is a side view of a retaining means in use holding a small bunch of wires to a panel, the panel and the wires being sectioned.

Figure 3 is a plan view of Figure 2;

Figure 4 is a side view of retaining means in use holding a large bunch of wires to a panel, the panel and the wires being sectioned;

Figure 5 is a plan view of Figure 4;

Figure 6 is a front perspective view of a second embodiment of a retaining means without a loop fitted; and

Figure 7 is a side view of the second embodiment of a retaining means in use holding a small bunch of wires to a panel, the panel and the wires being sectioned.

5 Referring to Figures 1 to 5, there is provided a retaining means having an attachment member 10 and a retaining loop 12. The attachment member 10 has two arms 14 and 16 arranged in a somewhat "V" shape with the arm 14 being longer than the arm 16. The loop 12 should be made of a resilient material, as should the attachment member 10. The loop may be moulded integrally with the attachment member or may be a separate component and may be of any suitable shape such as circular, elliptical or rectangular.

10 The arm 16 has a projection 18 on the inner side of its outer end so that the end with the projection 18 may be engaged with the edge of the material about a hole 20 in a panel 22.

15 The arm 14 has an outwardly-extending hook 24 at its outer end and it is of such a length that when the attachment member 10 is in a hole 20 in a panel 22 with the projection 18 on the arm 16 engaged with the edge of the material at one side of the hole 20 the arm 14 will project through the panel 22 with hook 24 on one side of the panel 22 and the main portion of the "V" shaped portion of the attachment member on the other side.

20
25 At a short distance below the hook 24 - a distance from the junction of the two arms 14 and 16 substantially equal to the length of arm 16 plus the thickness of the panel 22 - there are two fingers 26 spaced apart a distance greater than the thickness of the hook 24 and arranged so that there is

one finger 26 on each side of the hook 24. The fingers 26 are provided to bear on the upper surface of the panel 22 when the projection 18 is engaged in the hole 20 and the end of arm 16 is bearing on the lower surface of panel 22 so that linear movement of the attachment member 10 relative to the panel 22 is limited.

The loop 12 joins onto the leg 14 at about the location of the fingers 26 and extends in a direction away from the hook 24 of the leg 14 and in a plane substantially perpendicular to the direction of leg 14 of attachment member 10.

In use, the attachment member 10 is pressed into a hole 20 in a panel 22 until the fingers 26 engage the outer surface of the panel 22 and the projection 18 on the arm 16 engages the material around the hole 20. The hole 20 is of a size such that the attachment member 10 will pass through it in a "compressed" state, and when the arm 16 is nearly through the panel 22, it will spring outwardly a short distance to effect that engagement. The loop 12 will then lie upon the outer surface of the panel 22, and when a wire or bunch of wires 28 is positioned against the loop 12 as close to the hook 24, the loop 12 is drawn about the wire or bunch of wires 28 and engaged with the hook 24 as to hold the wires or bunch of wires 28 in position.

The retaining device may be used to hold in position a relatively small wire 28 (Figures 2 and 3) such that the loop 12 is substantially in its open condition when engaged with the hook 24, or substantially larger wires 29 (Figures 4 and 5) such that the loop 12 is stretched to engage with the

hook 12.

By reason of the initial shape of the loop 12 it will tend to return to its open position (see Figure 1) and thereby maintain tension on the wire. This is best illustrated by comparing the shape of the loop 12 in Figures 3 and 5 where significantly larger wire sizes are involved.

In Figures 6 and 7 there is illustrated a second embodiment of a retaining means according to the invention wherein the loop, here designated 12¹ is formed separately to the attachment member, here designated 10¹, loop 12¹ being more in the style of an O-ring. In this case, the longer arm 14¹ of the attachment member 10¹ is provided with a lower hook 26¹ instead of the fingers 26 in the embodiment shown in Figures 1 to 5. The lower hook 26¹ is shaped to grip the loop 12¹ and to hold it against the upper surface of the panel 22¹ such that the loop 12¹ will not tend to disengage from the attachment member 10¹. The attachment member may, in the case of this two-piece construction, be of one standard or quality of material and the loop may be of a more elastic material.

The fastening member may be modified in design to suit particular requirements, care being taken to retain the feature of ease of production as by moulding in a simple split or two-piece mould. All such modifications are to be deemed to be included in the ambit of the invention the nature of which is to be ascertained from the following claims.

The claims defining the invention are as follows:

1. A retaining device comprising a resilient attachment member adapted to be engaged in a hole in a panel or other support and a resilient loop member connected or connectible to the attachment member, the attachment member having means for, in use, retaining it in its position in the hole and means for holding part of the loop member when the loop member is wrapped around a wire, and the loop member being such that, in use, when it is wrapped around the wire and held by the attachment member, it holds the wires in position.
2. A retaining device as claimed in claim 1, wherein the attachment member comprises a shorter arm and a longer arm arranged in a substantially V-shaped formation, the shorter arm being provided with a protrusion which acts as the means for, in use, retaining the attachment member in its position in the hole.
3. A retaining device as claimed in claim 2, wherein the longer arm is provided with a hook at the end opposite the joint of the longer arm and the shorter arm, the hook being provided in order to, in use, hold the loop to the attachment means after the loop has been wrapped around the wire.
4. A retaining device as claimed in claim 3, wherein there is provided a plurality of fingers mounted on the longer arm on the same side thereof as the hook, the fingers being provided to, in use, bear upon the panel so as to restrain the attachment member against axial movement.

5. A retaining device as claimed in claim 3, wherein there is provided a lower hook mounted on the longer arm on the same side thereof as the hook, the lower hook being provided to, in use, retain the loop in engagement with the attachment member and to bear upon the panel so as to restrain the attachment member against axial movement.
6. A retaining device as claimed in any one of claims 3 to 5, wherein the loop member is formed integrally with the attachment member and is connected to the attachment member in the vicinity of the hook.
7. A retaining device as claimed in any one of claims 3 to 5, wherein the loop member is formed separately to the attachment member.
8. A retaining device as claimed in any one of the preceding claims, wherein the attachment member and the loop are made of a resilient material.
9. A retaining device as claimed in claim 8, wherein the loop is made of a different material to the attachment member, the loop material being the more elastic.
10. A retaining device substantially as hereinbefore disclosed with reference to Figures 1 to 5 or Figures 6 and 7 of the accompanying drawings.

DATED this 24th day of July 1974.

W.A. DEUTSCHER PROPRIETARY
LIMITED

By its Patent Attorneys
CALLINAN AND NEWTON

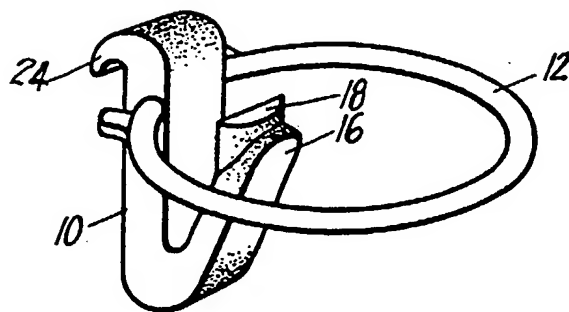


Fig. 1.

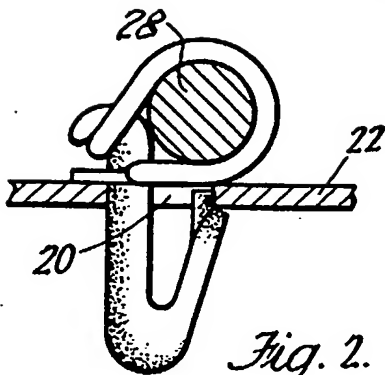


Fig. 2.

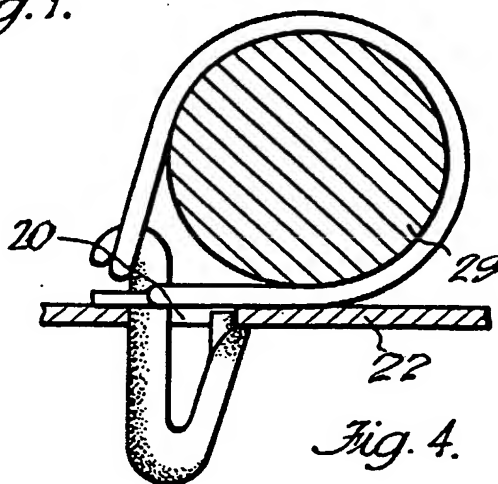


Fig. 4.

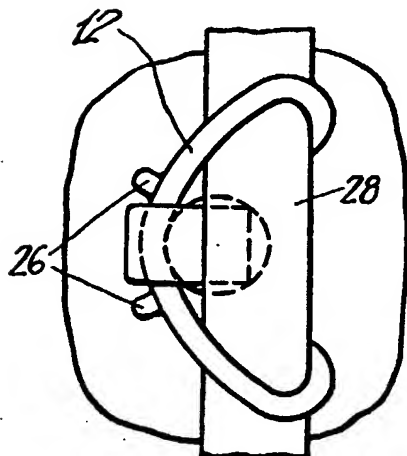


Fig. 3.

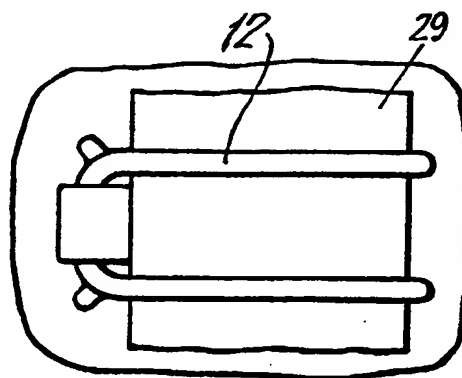


Fig. 5.

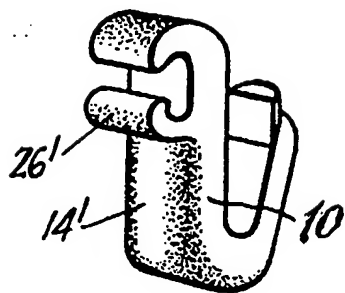


Fig. 6.

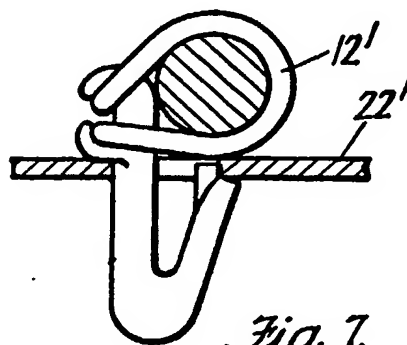


Fig. 7.

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